

CLAIMS

I claim:

1. A method of rate limiting traffic in a communications system comprising:
 - 5 parsing an incoming packet comprising a plurality of fields to generate an extracted plurality of fields;
 - transforming said extracted plurality of fields according to an algorithm to generate a result;
 - mapping said result according to a mapping function wherein the output of
 - 10 said mapping function is an index corresponding to a flow table entry;
 - reading the flow table entry identified by said index, said flow table entry containing at least a field identifying a credit value;
 - comparing said credit value to a quantity signifying insufficient credits;
 - processing or dropping the packet based on said comparing; and
 - 15 periodically incrementing said credit value by an increment.
2. The method of Claim 1 wherein said processing further comprises:
 - testing the size of the packet against said credit value;
 - decrementing said credit value by the size of the packet if the size is less than or equal to said credit value; and
 - 20 setting said credit value to zero and dropping the packet if the size is greater than said credit value.
3. The method of Claim 1 wherein said processing further comprises:
 - enqueueing the packet if said credit value is greater than or equal to zero; and
 - dropping the packet if said credit value is less than zero.

4. A computer system for communications, wherein said computer system comprises:

a buffer manager receiving a plurality of input flows, each input flow comprising a plurality of packets;

a controller coupled to said buffer manager, wherein said controller:

maps each of said input flows into a flow table, said flow table comprising a plurality of entries each containing at least a field identifying a credit value;

compares said credit value to a quantity signifying insufficient credits; processes or drops the packet based on said comparison; and periodically increments said credit value by an increment.

5. The computer system of Claim 4 wherein said controller further comprises circuitry to:

test the size of the packet against said credit value;

decrement said credit value by the size of the packet if the size is less than or equal to said credit value; and

set said credit value to zero and drop the packet if the size is greater than said credit value.

6. The computer system of Claim 4 wherein said controller further comprises circuitry to:

enqueue the packet if said credit value is greater than or equal to zero; and

drop the packet if said credit value is less than zero.

7. A computer system for computer system for communications, wherein said computer system comprises computer instructions for:

parsing an incoming packet comprising a plurality of fields to generate an extracted plurality of fields;

5 transforming said extracted plurality of fields according to an algorithm to generate a result;

mapping said result according to a mapping function wherein the output of said mapping function is an index corresponding to a flow table entry;

10 reading the flow table entry identified by said index, said flow table entry containing at least a field identifying a credit value;

comparing said credit value to a quantity signifying insufficient credits;

processing or dropping the packet based on said comparing; and

periodically incrementing said credit value by an increment.

15 8. The computer system of Claim 7 wherein said processing further comprises:

testing the size of the packet against said credit value;

decrementing said credit value by the size of the packet if the size is less than or equal to said credit value; and

20 setting said credit value to zero and dropping the packet if the size is greater than said credit value.

9. The computer system of Claim 7 wherein said processing further comprises:

enqueueing the packet if said credit value is greater than or equal to zero; and

dropping the packet if said credit value is less than zero.

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10. A computer readable storage medium comprising computer instructions for:

5 parsing an incoming packet comprising a plurality of fields to generate an extracted plurality of fields;
transforming said extracted plurality of fields according to an algorithm to generate a result;
mapping said result according to a mapping function wherein the output of said mapping function is an index corresponding to a flow table entry;
10 reading the flow table entry identified by said index, said flow table entry containing at least a field identifying a credit value;
comparing said credit value to a quantity signifying insufficient credits;
processing or dropping the packet based on said comparing; and
periodically incrementing said credit value by an increment.

11. The computer readable storage medium of Claim 10 wherein said processing further comprises:

15 testing the size of the packet against said credit value;
decrementing said credit value by the size of the packet if the size is less than or equal to said credit value; and
setting said credit value to zero and dropping the packet if the size is greater
20 than said credit value.

12. The computer readable storage medium of Claim 10 wherein said processing further comprises:

enqueueing the packet if said credit value is greater than or equal to zero; and
dropping the packet if said credit value is less than zero.